

Patent claims

1. A rotary transformer having at least one primary
5 winding and at least one secondary winding which can
move in rotary fashion with respect thereto,
characterized

- in that the primary winding and the secondary
10 winding are each divided into at least two
separate winding sections (11, 12, 13, 14, 15, 18,
19, 20, 21, 22, 33, 34, 35, 36, 37, 40, 41, 42,
43, 44, 62, 63, 64, 65, 66, 67, 71, 72, 73, 74,
75, 76),
- these winding sections interengaging in the manner
15 of a comb,
- and the current flow of winding sections, which
lie directly opposite one another so as to form an
air gap, in each case being in the opposite
direction.

20

2. The rotary transformer as claimed in claim 1,
characterized in that the winding sections (11, 12, 13,
14, 15, 18, 19, 20, 21, 22, 62, 63, 64, 65, 66, 67, 71,
72, 73, 74, 75, 76) extend parallel to the axis of
25 rotation (9, 58) of the rotary transformer (1, 46) and
are in the form of sleeves.

3. The rotary transformer as claimed in claim 1,
characterized in that the winding sections (33, 34, 35,
30 36, 37, 40, 41, 42, 43, 44) extend perpendicularly with
respect to the axis of rotation (31) of the rotary
transformer (24) and are circular.

35 4. The rotary transformer as claimed in one of the
preceding claims, characterized in that two core halves
are provided which can move in rotary fashion with
respect to one another and form at least one annular

cutout for the purpose of accommodating the primary winding and the secondary winding.

5. The rotary transformer as claimed in claim 4,
characterized in that the two core halves are designed
to be essentially symmetrical, and each core half
comprises a base plate (2, 5, 47, 52) having an
integrally formed outer ring (3, 6, 48, 53) and an
integrally formed inner cylinder (4, 7, 51, 56) or an
10 integrally formed inner ring.

6. The rotary transformer as claimed in claim 5,
characterized in that the base plates (47, 52) are
provided with at least one integrally formed
15 intermediate ring (49, 50, 54, 55) in order thus to
provide more than one annular cutout.

7. The rotary transformer as claimed in claim 4,
characterized in that the first core half has a base
20 plate (25) having an integrally formed inner cylinder
(26) or inner ring, and the second core half has a base
plate (27) having an integrally formed outer ring (28).

8. The rotary transformer as claimed in one of claims
25 5-8, characterized in that the individual winding
sections (11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 62,
63, 64, 65, 66, 67, 71, 72, 73, 74, 75, 76) are fixed
in circular winding supports (10, 17, 59, 60, 61, 68,
69, 70), which are mounted on the inner sides of the
30 base plates (2, 5).

9. The rotary transformer as claimed in one of claims
5-8, characterized in that the individual winding
sections (33, 34, 35, 36, 37, 40, 41, 42, 43, 44) are
35 fixed in sleeve-shaped winding supports (32, 39), which
are mounted on the outer side of the inner cylinder
(26) or inner ring and on the inner side of the outer
ring (28).

10. The rotary transformer as claimed in claim 8 or 9, characterized in that the electrical connections between the individual winding sections (11, 12, 13, 5 14, 15, 18, 19, 20, 21, 22, 33, 34, 35, 36, 37, 40, 41, 42, 43, 44, 62, 63, 64, 65, 66, 67, 71, 72, 73, 74, 75, 76) run in the winding supports (10, 17, 32, 39, 59, 60, 61, 68, 69, 70).
- 10 11. The rotary transformer as claimed in one of the preceding claims, characterized in that winding terminations (16, 23, 38, 45) are passed to the outside via corresponding openings in the base plates (2, 5, 25, 27, 47, 52).
15
12. The rotary transformer as claimed in one of the preceding claims, characterized in that a winding section comprises a single turn.
- 20 13. The rotary transformer as claimed in one of claims 1-12, characterized in that a winding section comprises a plurality of turns.
- 25 14. The rotary transformer as claimed in one of claims 4-13, characterized in that in each case one central hole (81, 88) is provided in the core halves.